DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 1.28

WELDING INSPECTION REPORT

Resident Engineer: Siegenthaler, Peter
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-022205
Date Inspected: 30-Mar-2011

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: American Bridge/Fluor Enterprises, a JV

OSM Arrival Time: 700
OSM Departure Time: 1530
Location: Job Site

CWI Name:	See Report Below			**CWI Present:**	☑ Yes	☐ No	
Inspected CWI report:	☐ Yes	☑ No	☐ N/A	**Rod Oven in Use:**	☑ Yes	☐ No	☐ N/A
Electrode to specification:	☑ Yes	☐ No	☐ N/A	**Weld Procedures Followed:**	☑ Yes	☐ No	☐ N/A
Qualified Welders:	☑ Yes	☐ No	☐ N/A	**Verified Joint Fit-up:**	☑ Yes	☐ No	☐ N/A
Approved Drawings:	☑ Yes	☐ No	☐ N/A	**Approved WPS:**	☑ Yes	☐ No	☐ N/A
				Delayed / Cancelled:	☐ Yes	☑ No	☐ N/A

Bridge No: 34-0006
Component: Orthotropic Box Girders

Summary of Items Observed:

At the start of the shift the Quality Assurance Inspector (QAI) traveled to the project site and observed the following work performed by American Bridge/Fluor Enterprises (AB/F) personnel at the locations noted below:

A). Longitudinal "A" Deck Stiffeners
B). Deck Access Hole
C). Pipe Supports
D). Tower Splice Plates

The QA Inspector observed the onsite inspection performed by the contractor's QC Inspection personnel. The inspection was performed on various field fit-up of weld joints and the Complete Joint Penetration (CJP) groove welds of the West Orthotropic Box Girders (OBG) and the South Tower Shaft. The welding was performed utilizing the Shielded Metal Arc Welding (SMAW) process as per the Welding Procedure Specifications (WPS's)and was also used by the QC Inspectors to monitor the welding operation and to verify the welding parameters.

A). Longitudinal "A" Deck Stiffeners

The QA Inspector observed the continued CJP welding of the longitudinal stiffeners located at the field splices identified as WN: 6W-7W-A-LS4. The welding was performed by the welder Wai Kitlai ID-2953. The welding of the longitudinal stiffener was not completed during this shift.

B). Deck Access Hole at PP29.5

The QAI observed the welder, Wen Han Yu ID-6317, perform the CJP welding of the Deck Access Hole (DAH) located Panel Point 29.5 and identified as WN: 5W-PP29.5-W5-SW. The CJP welding of the DAH was not completed during this shift.

C). Pipe Supports

The QAI observe the continued welding of the pipe supports along the W5 grid line located on the "A" Deck of the OBG identified as W11. The QC inspector performed the in process inspection utilizing the Welding Procedure Specification (WPS) identified as Fillet Murex to monitor the tack welding and to verify the welding parameters. The welding parameters were observed and recorded as 91 amps utilizing 2.4 mm electrodes with the welding performed in the 2F and 3F position. The welding was performed by F.W. Spencer welding personnel Rick Kiikvee ID-5319.

D). Tower Splice Plates

The QAI observed the installation and tack welding of the temporary attachments to support the upper and lower splices at two (2) locations on the interior of the south tower shaft. The tack welding was performed by Eric Sparks ID-3040 utilizing WPS.

Later in the shift the QAI observed the field installation, fit-up and welding of the temporary strongbacks to the shear plates located between the base plate elevation and the 13 meter elevation. The welding was performed by Rick Clayborn ID-2773.

E). QAI Verification

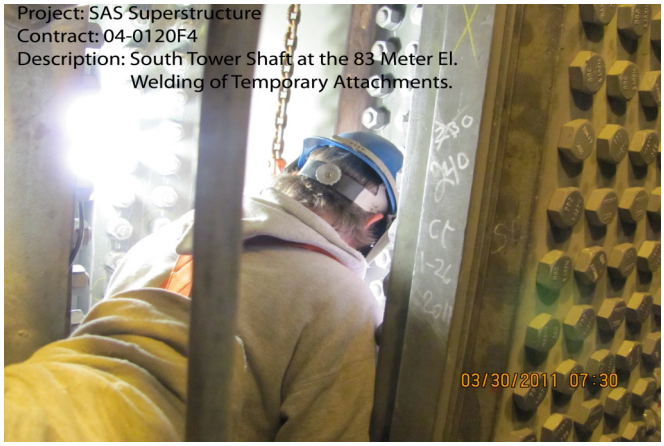
The QAI performed a random Ultrasonic Verification (UT) and Magnetic Particle Test, (MPT) test of the following CJP weld identified as WN: 8W-PP70.5-W5-SW. A total area of approximately 10% was tested to verify the weld and testing by QC meet the requirements of the contract documents. At the conclusion of the testing a UT report, TL6027 and a MT report, TL-6028 was generated on this date.

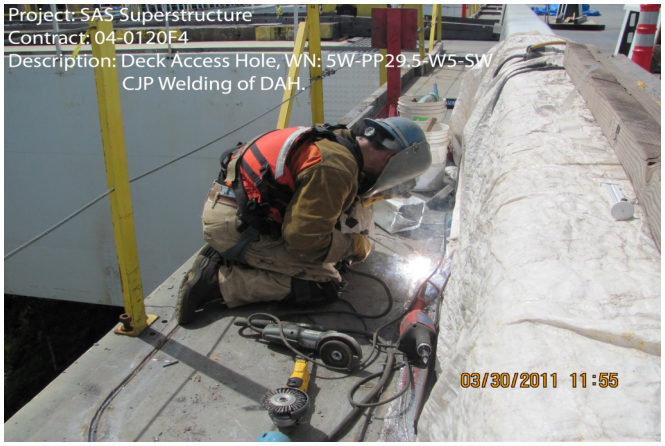
QA Summary

The welding was performed in the vertical (3G & 3F), overhead (4G) position and the horizontal (2F) position utilizing low hydrogen electrodes. The welding parameters were verified and recorded by the QC inspector and observed by the QAI appeared to comply with the WPS identified as ABF-WPS-D15-1012-3, Rev. 0, ABF-WPS-D15-1010, Rev. 1, ABF-WPS-D15-F1200A and ABF-WPS-D15-2160-1, Rev. 0. The welders utilized a slag hammer and a wire wheel attached to a 4" high cycle grinder to remove slag after the deposit of each weld pass. The 3.2 mm and 4.0 mm electrodes were stored in electrically heated, thermostatically controlled oven after removal from the sealed containers. The exposure limits of the electrodes identified as E 7018-H4R and E9018-H4R appeared to comply with the minimum storage oven temperature of 120 degees Celsius as per the contract documents. The WPS's were also utilized by the QC inspectors, Gary Ehrsam, Steve Jensen and Pat Swain, as a reference to monitor the welding operation, to verify the welding parameters and verify the minimum

preheat and the interpass temperatures. The welding parameters and surface temperatures were verified by the QC inspector's utilizing a Fluke 337 clamp meter for the electrical welding parameters and Tempil Heat Indicators for verifying the preheat and interpass temperatures. At the time of the observation no issues were noted by the QAI.

The digital photographs below illustrate some of the work observed during this scheduled shift.





Summary of Conversations:

There were general conversations with Quality Control Lead Inspector, Bonifacio Daquinag, Jr., at the start of the shift regarding the location of American Bridge/Fluor welding, inspection and N.D.E. testing personnel scheduled for this shift.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Nina Choy (510) 385-5910, who represents the Office of Structural Materials for your project.

Inspected By:	Reyes,Danny	Quality Assurance Inspector
Reviewed By:	Levell,Bill	QA Reviewer